CLAIMS

What is claimed is:

1 1.   A system comprising a first ATM transmission device, the first ATM

2 transmission device having:

3   a destination hold circuit to hold a determined selector identification;

4   a first destination receive circuit to receive a setup message having a first selector

5 content and establish a connection;

6   a second destination receive circuit to receive on the connection a first ATM data

7 message having a first data from an ATM source transmission device;

8   a destination read circuit to read the first selector content and compare the first

9 selector content to the selector identification; and

10   a destination compose circuit to compose a second data message having a to-be

11 transmitted second data based on the received first data and an address of the source

12 transmission device and send the second data message if the first selector content

13 corresponds to the determined selector identification.

1 2.   The system defined in claim 1 wherein at least a portion of the to-be transmitted

2 second data is the received first data.

1 3.   The system defined in claim 1 wherein the transmitted second data is the to-be

2 received first data.

1   4.   The system defined in claim 1 wherein the first ATM transmission device

2   includes a processing device to respond to a coupled stored program, and the processing

3   device responding to the stored program includes at least one of the first destination

4   receive circuit, the second destination receive circuit, the destination read circuit, and the

5   destination compose circuit.

1   5.   The system defined in claim 1 further including a second ATM transmission

2   device, the second ATM transmission device having:

3   a first compose circuit to compose the setup message having the first selector

4   content;

5   a second compose circuit to compose the first ATM data message;

6   a transmit circuit to transmit the first ATM data message to an ATM transmission

7   device, and

8   a compare circuit to compare the transmitted first data to the received second data

9   if the source transmission device receives the second data message.

1   6.   The system defined in claim 5 wherein the second ATM transmission device

2   includes a processing device to respond to a coupled stored program, and the processing

3   device responding to the stored program includes at least one of the first compose circuit,

4   the second compose circuit, the transmit circuit, and the compare circuit.

1 7.   The system defined in claim 5 wherein the second ATM transmission device

2 includes a circuit to receive an information element characterized by one of a trace

3 information element containing hop information and a pathtrace information element

4 containing pathtrace information, and a circuit to transmit at least a portion of the

5 information element to a user interface.

1 8.   The system defined in claim 5 wherein the second ATM transmission device

2 includes a circuit to receive an information element characterized by one of a trace

3 information element containing hop information and a pathtrace information element

4 containing pathtrace information, and a formatting circuit to format at least a portion of

5 the information element for at least one of displaying the portion of information on a

6 display terminal and printing the portion of information on a printing device.

1 9.   A method comprising:

2   a first ATM transmission device sending a setup message having an address

3 selector set to a determined value to cause a second ATM transmission device to send a

4 first confirming data message in response to receiving the first data message to establish

5 an ATM connection between the first ATM transmission device and the second ATM

6 transmission device data, and to reflect a subsequent data message on the connection;

7   the first ATM transmission device establishing a connection between the first

8 ATM transmission device and the second ATM transmission device in response to the

9 second ATM transmission device receiving the setup message; and

10   the first ATM transmission device sending a first data message to the second

11   ATM transmission device after the first ATM transmission device establishes the

12   connection, the first data message having a transmitted first data.

1   10.   The method defined in claim 9

2   wherein the first ATM transmission device sending a startup message includes the

3   first ATM transmission device attaching a trace information element to the startup

4   message;

5   the establishing a connection includes the first ATM transmission device

6   receiving the received trace response; and

7   the first ATM transmission device sending at least a portion of the received trace

8   response to a user interface.

1   11.   The method defined in claim 9 further including

2   the second ATM device receiving the setup message;

3   the second ATM device reading the address selector byte;

4   the second ATM transmission device receiving the first data message;

5   if the read address selector byte corresponds to the determined value, the second

6   ATM transmission sending a second data message to the first ATM transmission device

7   having a second data that includes at least a portion of the received first data.

1   12.   The method defined in claim 11 further including

2   the first ATM transmission device receiving the second data message; and

3   the first ATM transmission device comparing the transmitted first data to the received

4   sent second data.

1   13.   A method comprising:

2   a first ATM transmission device receiving a setup message from a second ATM

3   transmission device having a first address selector content;

4   a connection being established between the first transmission device and the

5   second transmission device;

6   the first ATM transmission device receiving a first data message on the

7   connection having a received first data;

8   the first ATM transmission device comparing the first address selector byte to a

9   special address selector byte of the first ATM transmission device and if the first address

10   selector content corresponds to a special address selector identification, the first ATM

11   transmission device composing and sending a second data message to the second ATM

12   transmission device having at least a portion of the sent second data corresponding to the

13   received first data.

1   14.   The method defined in claim 13 further including:

2   the second ATM transmission device composing the setup message;

3   the second ATM transmission device composing the data message to have a first

4   data;

5   the second ATM transmission device sending the first data message wherein the

6   received first data message coincides with the received first data message of claim 13.

1   15.   The method defined in claim 13 further including:

2   the second ATM transmission device receiving the sent second data message; and

3   the second transmission device comparing the sent second data to the transmitted

4   first data.

1   16.   A machine-readable medium that provides instructions which, when executed by

2   at least one processor on an ATM transmission device, cause said processor to perform

3   operations comprising

4   receiving a first ATM setup message from a first ATM transmission device

5   having a destination address having a first selector content;

6   establishing a connection between the ATM transmission device and the first

7   ATM transmission device;

8   reading the selector content and comparing the selector content to a selector

9   identification;

10   receiving a first ATM data message on the connection having a first data; and

11   if the selector content corresponds to the selector identification, composing a

12   second data message having a transmitted second data based on the received first data

13   and causing the ATM transmission device to send the second data message on the

14   connection.

1   17.   The operations defined in claim 16 wherein the second data is one of at least a

2   portion of the received first data and an algorithmically transformed data based on at least

3   a portion of the received first data.

1   18.   The operations defined in claim 16 wherein the transmitted second data is the

2   received first data.

1   19.   The system defined in claim 5 wherein the second ATM transmission device

2   includes a circuit to receive one of a trace information element containing hop

3   information and a pathtrace information element containing pathtrace information, and a

4   circuit to transmit at least a portion of the hop information to a usr interface.

1   20.   An ATM transmission device that includes a circuit to receive an information

2   element characterized by one of a trace information element containing hop information

3   and a pathtrace information element containing pathtrace information, and a circuit to

4   format at least a portion of the information element for outputting to a terminal.

1   21.   The ATM transmission device defined in claim 20 wherein the terminal includes

2   at least one of at least one of a display and a printer.

1   22.   The ATM transmission device defined in claim 20 that further includes a circuit

2   to output the at least a portion of the information to the terminal

1   23.   An ATM transmission device that includes:

2   first means for holding a determined destination device selector identification;

3   second means for receiving a setup message having a first selector content and

4   setting up a connection;

5   third means for receiving on the connection a first ATM data message having a

6   first data from an ATM source transmission device;

7   fourth means for the destination device reading the first selector content and

8   comparing the first selector content to the selector identification; and

9   fifth means for the destination device composing a second data message having a

10   to-be transmitted second data based on the received first data and an address of the source

11   transmission device and sending the second data message if the first selector content

12   corresponds to the determined selector identification.

1   24.   The ATM transmission device defined in claim 23 wherein at least a portion of

2   the to-be transmitted second data is the received first data.

1   25.   The ATM transmission device defined in claim 23 wherein the transmitted second

2   data is the to-be received first data.

1   26.   The ATM transmission device defined in claim 23 wherein the ATM transmission

2   device includes sixth means for responding to a coupled stored program and the sixth

3   means responding to the stored program includes at least one of the setup message

4   destination receive circuit means, the data message destination receive circuit means, the

5   destination read circuit means, and the destination compose circuit means.

1   27.   An ATM transmission device that includes

2   a first circuit to store a selector code byte identification for a service to reflect

3   back to the source transmission device of a connection at least a portion of a data

4   transmitted by the source transmission device if the setup message for the source

5   transmission device includes a selector code equivalent to the selector code byte

6   identification from the source ;

7   a first receive circuit to receive a setup message having a first selector content and

8   establish a connection;

9   a second receive circuit to receive on the connection a first ATM data message

10   having a first data from an ATM source transmission device;

11   a read circuit to read the first selector content and compare the first selector

12   content to the stored selector code byte identification; and

13   if the selector identification binary value is equivalent to the stored selector code

14   byte identification, to compose and to send to the source transmission device a second

15   data message having a second data based on the received first data.

1   28.   The ATM transmission device defined in claim 27 wherein the to-be transmitted

2   second data is the received first data.

1   29.   The ATM transmission device defined in claim 27 that includes a processing

2   device to respond to a coupled stored program, and the processing device responding to

3   the stored program includes at least one of the first receive circuit, the second receive

4   circuit, the read circuit, and the compose circuit.